

I CLAIM:

1. A container dispensing machine for storing and dispensing containers longitudinally, where each container has a base and a top, said top being smaller than said base, said dispensing machine comprising a plurality of vertical guides arranged in at least one set, said vertical guides being sized so that a plurality of containers can fit within each of said guides longitudinally with said base being located beneath said top, two abutments rotatably mounted in a plane substantially normal to a longitudinal centre axis of said at least one set, an actuator connected to rotate said two abutments by part of one turn in said plane for each activation, each of said two abutments having a cutaway portion, said two abutments being an upper abutment and a lower abutment, said abutments being oriented so that the cutaway portion of said upper abutment is vertically offset from the cutaway portion of said lower abutment by at least the distance that said two abutments rotate in one activation, said abutments rotating about said longitudinal centre axis of said at least one set, said upper abutments being sized to rotate without damaging containers on said lower abutment, said abutments being vertically separated by less than a height of one container, said vertical guides having an opening therein corresponding to a level of said upper abutment to allow said upper abutment to pass through said guide means, said dispensing machine having an outlet for any containers that pass said lower abutment.

2. A dispensing machine is claimed in Claim 1 wherein each said two upper abutments is sized and located to block a passage of containers through all of said vertical guides except one.

3. A dispensing machine is claimed in Claim 2 wherein said containers have a neck that is narrower than a body of said containers, said upper abutment being smaller than said lower abutment.
4. A dispensing machine as claimed in Claim 1 wherein said lower abutments is located beneath all of said containers that are being retained in said machine.
5. A dispensing machine is claimed in any one of Claims 1, 2 or 4 wherein said abutments are mounted on a vertical shaft, said shaft being rotatable by said actuator.
6. A dispensing machine is claimed in any one of Claims 1, 2 or 4 wherein said abutments are mounted on a vertical shaft, said shaft being rotatable by said actuator and said actuator includes a motor, there being a separate motor for each set of said at least one set.
7. A dispensing machine is claimed in any one of Claims 1, 2 or 4 wherein each abutment has a straight edge adjacent to said cutaway portion.
8. A dispensing machine is claimed in any one of Claims 1, 3 or 4 wherein said vertical guides are tubes.
9. A dispensing machine is claimed in any one of Claims 1, 3 or 4 wherein there is a space along said longitudinal centre axis of each set and a vertical shaft and motor to rotate said shaft is mounted within said space, said abutments being mounted on said shaft.
10. A dispensing machine is claimed in any one of Claims 1, 3 or 4 wherein the vertical guides are tubes and said tubes have a cross-

sectional shape selected from the group of circular, rectangular and square.

11. A dispensing machine is claimed in Claim 1 wherein each of said two abutments is shaped to at least partially block all of said vertical guides but one after each activation.

12. A dispensing machine is claimed in Claim 1 wherein there are four vertical guides in each set with a space between said guides along said longitudinal axis.

13. A dispensing machine is claimed in Claim 12 wherein said actuator is constructed to rotate said abutments 90° for each activation, said cutaway portions being 180° apart from one another.

14. A dispensing machine is claimed in Claim 12 wherein said abutments have a shape approximately equal to two-thirds of a circle.

15. A dispensing machine is claimed in Claim 1 and said abutments are mounted on a shaft, said upper abutment being adjustably mounted so that a distance between said upper abutment and said lower abutment can be varied to accommodate containers of different vertical sizes.

16. A dispensing machine is claimed in Claim 1 wherein said upper abutment extends into said vertical guides as said abutments rotate, said upper abutment preventing bases of containers in all but one of said vertical guides from moving downward upon each activation.

17. A dispensing machine is claimed in Claim 16 wherein said lower abutment is sized and located to prevent the bases of all of the

containers in all but one of the vertical guides from moving downward past the lower abutment to said outlet, each container passing said abutments through said cutaway portion.

18. A dispensing machine is claimed in Claim 1 wherein there are a plurality of sets of said at least one set in said dispensing machine, each set comprising a different selection.

19. A dispensing machine is claimed in Claim 1 wherein there are at least twelve sets in said dispensing machine, each set having an actuator including a motor and a selector connected to permit selection of one container from any of said sets upon each activation.

20. A dispensing machine is claimed in Claim 1 wherein there are at least fifteen sets in said dispensing machine, each set having an actuator including a motor and a selector connected to permit selection of one container from any of said sets upon each activation.

21. A dispensing machine as claimed in any one of Claims 1, 2 or 4 wherein all of said plurality of sets is mounted within a housing.

22. A dispensing machine as claimed in any one of Claims 1, 2 or 4 wherein all of said plurality of sets is mounted within a housing, said sets being divided into a plurality of clusters of more than one set, each cluster being tiltable forward in succession within said housing to permit sets of each cluster to be filled with containers.

23. A dispensing machine as claimed in Claims 1, 2 or 4 wherein said sets are held together with straps.

24. A dispensing machine as claimed in any one of Claims 1, 2 or 4 wherein each set can store at least twelve containers.

25. A dispensing machine as claimed in any one of Claims 1, 2 or 4 wherein each set can store at least twenty-four containers.

26. A method of dispensing containers from a dispensing machine, said containers being stored and dispensed longitudinally from vertical guides within a housing of the machine, said containers having a base and a top with said top being smaller than said base, said method comprising arranging a plurality of said vertical guides in at least one set, locating two abutments in a plane normal to a longitudinal centre axis of said at least one set, mounting said abutments vertically apart from one another, locating a cutaway portion in each abutment, offsetting the cutaway portions from one another, locating said abutments on any actuator to rotate said abutments, filling said guides with containers and activating said actuator to dispense the containers from said at least one set, at a ratio of one container for each activation.